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## ABSTRACT

The invention features an optical medium for calibrating UV absorbance detectors, methods for making such an optical medium, and methods for calibrating UV absorbance detectors using such a medium. The optical calibration medium includes a gel-sol silica glass monolith with a rare-earth dopant therein. The rare-earth dopant exhibits at least one spectral feature in at least the far UV range. The constituents of the gel-sol silica glass monolith are selected so the rare-earth doped sol-gel glass monolith exhibits a transmittance in the far UV range so each distinct spectral feature of the rare-earth dopant in the far UV range is discernable. The transmittance in a particular embodiment is at least about 50% at about 250nm. The rare earth materials selected for use as dopants are those exhibiting a wide range of spectral features, preferably over a range from about 190nm to about 700nm and more particularly exhibit at least one distinct spectral feature in the range from about 190nm to about 300nm. In a specific embodiment, the rare-earth dopant includes atoms of erbium, having spectral features in a range from about 190nm to about 650nm and a distinguishable far UV spectral feature at about 257nm.